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Berkeley Lab Solar Demographics Tool User Guide

The [Solar Demographics Tool](#) is an interactive data dashboard that allows users to visualize and download data presented in the LBNL report [Income Trends among U.S. Residential Rooftop Solar Adopters](#). This User Guide is intended to describe the basic features of the tool. Please refer to the report, itself, for details on the underlying data and key methodological elements.

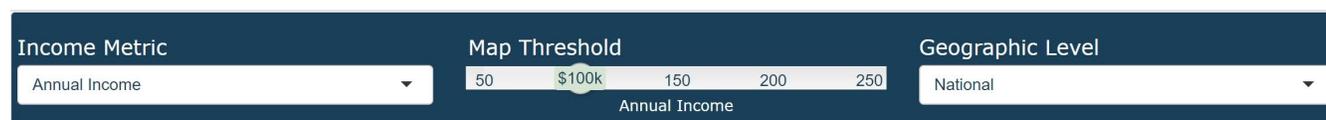
Overview

The tool includes a map and a set of figures that can be used to explore solar-adopter income distributions at various geographical scales. The map focuses solely on installations in 2018, and shows the percentage of those solar adopters with household incomes below a given threshold. For example, by default, the map shows the percent of solar adopters in each state with incomes below \$100,000. Both the income threshold and the metric itself (absolute income vs. various measures of relative income) can be modified using the tool controls, as described further below. Mousing over the map displays additional information, including the underlying sample size for individual states and counties.

The figures included in the tool show the full distribution of solar-adopter incomes. The tool displays a single figure at a time, which can be toggled between two display options: one with time series data for 2010-2018 (or whichever years within that span have sufficient data) and another focusing solely on 2018 installations. The user can toggle between these two display options using the button below the figure. Figures for individual states and counties can be viewed by clicking on the corresponding state or county in the map. Note that, for both the map and the figures, summary statistics are presented only if at least 30 observations are available for the given state or county in the given year.

Controls

The tool has three user selections at the top of the dashboard:



The control panel is a dark blue horizontal bar with three main sections:

- Income Metric:** A dropdown menu currently set to "Annual Income".
- Map Threshold:** A range slider with values 50, \$100k (highlighted), 150, 200, and 250. The label "Annual Income" is centered below the slider.
- Geographic Level:** A dropdown menu currently set to "National".

Income Metric

The drop-down menu on the left-hand side of the control panel allows the user to select different income metrics for the map and figures. Currently, four different metrics are available:

1. Annual Income: absolute annual household income in US\$/year
2. Percent of Area Median Income: annual household income as a percent of the applicable Area Median Income (AMI), based on the relevant metropolitan area (or county in rural areas)
3. State Income Percentiles: the income percentile range among all households in the state

- Percent of Federal Poverty Level: annual household income as a percent of the Federal Poverty Level, as defined by the U.S. Department of Health and Human Services

Selecting a particular metric determines how the map and figures are scaled, and depending on the particular metric, may control for some regional income differences.

Map Threshold

This sliding scale allows users to select the threshold level used to plot the map, and the units along the scale update based on the income metric selected. For example, when the income metric is set to Annual Income, selecting \$150k on the threshold slide will display on the map the percentage of solar adopters with household incomes below \$150k. The threshold slide is used only for the map; it does not affect the figures.

Geographic Level

This drop-down menu allows users to select the geographic level for the map and figures. Currently, three different geographical scales are available: national; state; and county. Selecting County on the drop down menu will display data on the map for all counties with sufficient observations in 2018.

Downloads

The app allows the user to download various elements from the dashboard. The set of files available for download are dynamic and vary based on the particular geographic unit selected in the map.



Data

The user can download data files containing the summary statistics plotted in the map and figures. Note that these files do not include the underlying income estimates for individual households, but rather detailed summary statistics describing the distribution of solar-adopter incomes over time and at different geographical scales. When the geographic level is National, a national data set is available (“All Data”). When the geographic level is State, the user can download a data file for just the selected state (e.g. “Louisiana”) or a full state-level data set (“All States”). When the geographic level is County, the user can download a data set for the selected county (e.g. “Palm Beach County, FL) or a full county-level data set (“All Counties). Note that the data files exclude summary statistics for individual states and counties, in particular years, if fewer than 30 observations are available. Thus, for example, summary statistics for a particular county may be provided only for the years 2016-2018, if fewer than 30 observations are available in earlier years.

Maps

The user has two different options for downloading maps. The “Full Map” option allows the user to download a map of the contiguous U.S. and Hawaii (no data are available for Alaska), based on whatever income metric and threshold are currently selected. The “Selection” option instead downloads the map view currently displayed in the application (e.g., if the user has zoomed in on a particular region).

Plots

The user can download both of the available figure types for the selected geographical region: either the figure showing the income distribution among solar adopters in 2018 or the figure showing the full time series.

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